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International application number: PCT/US05/006854

International filing date: 04 March 2005 (04.03.2005)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/551,077
Filing date: 08 March 2004 (08.03.2004)

Date of receipt at the International Bureau: 31 March 2005 (31.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

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March 17, 2005

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APPLICATION NUMBER: 60/551,077

FILING DATE: *March 08, 2004*

RELATED PCT APPLICATION NUMBER: *PCT/US05/06854*



Certified by

Under Secretary of Commerce
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. EV320050389US

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
AKHTAR	HASEEB	GARLAND, TX, USA

Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max)

RESOURCE RESERVATION TO MINIMIZE CALL SETUP DELAY FOR PTT

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification Number of Pages 8 ☐ CD(s), Number _____
☐ Drawing(s) Number of Sheets _____ ☐ Other (specify) _____
☐ Application Data Sheet. See 37 CFR 1.76

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☐ Applicant claims small entity status. See 37 CFR 1.27.
☐ A check or money order is enclosed to cover the filing fees.
☒ The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 50-0210
☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE
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\$160.00

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

[Page 1 of 2]

Respectfully submitted,

SIGNATURE

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Date MARCH 8, 2004

REGISTRATION NO. 25,231

(if appropriate)

Docket Number: 16853RRUS01P

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Provisional Patent Application

Title:

**Resource Reservation to Minimize
Call Setup Delay for PTT**

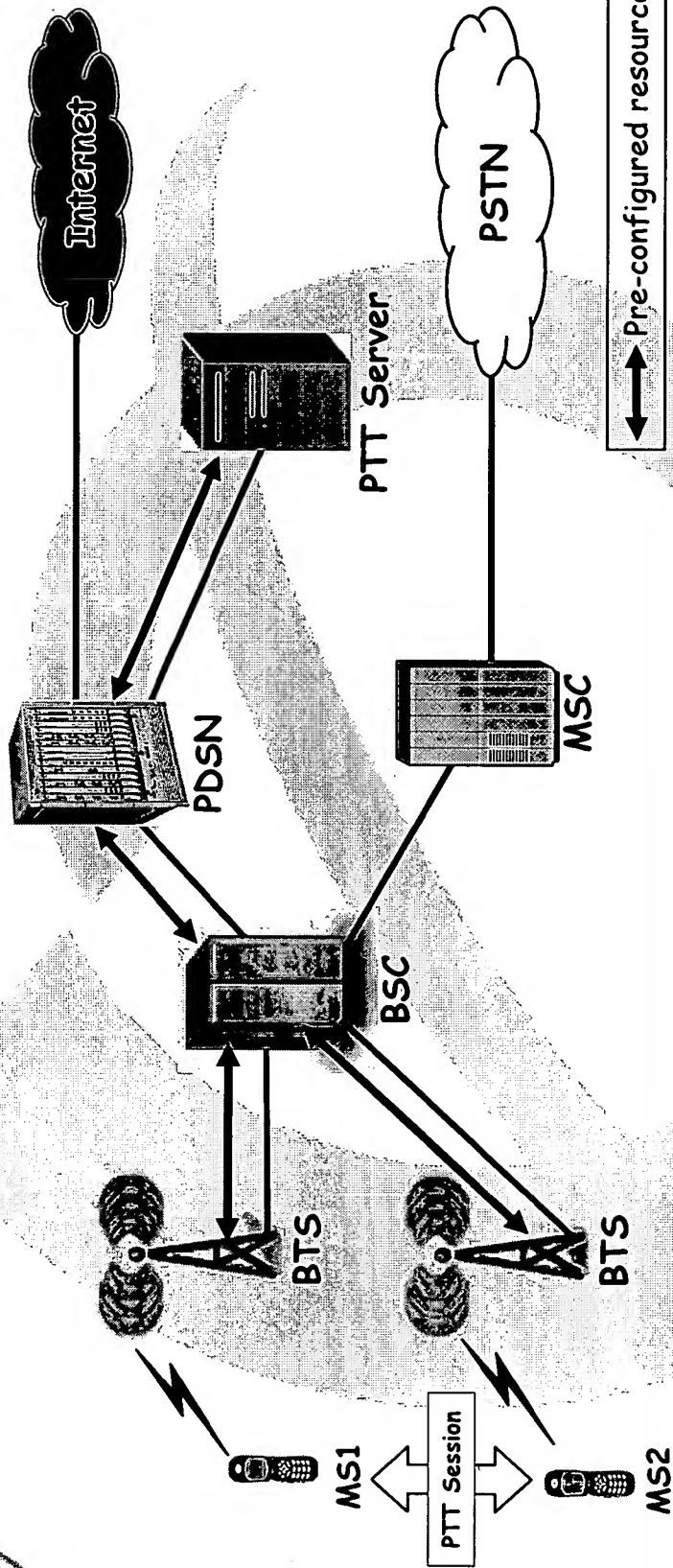
Inventors:

Haseeb Akhtar, Garland, TX, USA

Overview

- Call setup time is an important quality metric for PTT (Push To Talk) application
- Call setup time can be substantially reduced by reserving resources for PTT users a-priori
 - Both access and core networks are impacted
- The BSC (Base Station Controller) routes the PTT calls through the pre-provisioned channels as soon as the user is identified
 - The access network must be able to identify the PTT users
- Signaling (such as SIP) and bearer (VoIP packets) traffics are routed through the dedicated channels
- BSC, PDSN and PTT Server may be connected through a managed IP network
 - Packets can be routed through dedicated IP routes with highest QoS
 - Packets can also be routed through dedicated Ethernet (10xBT) interface
- BTS, BSC and MSC may be connected through T1/E1 trunks

Dedicated Resources for PTT – Example 1



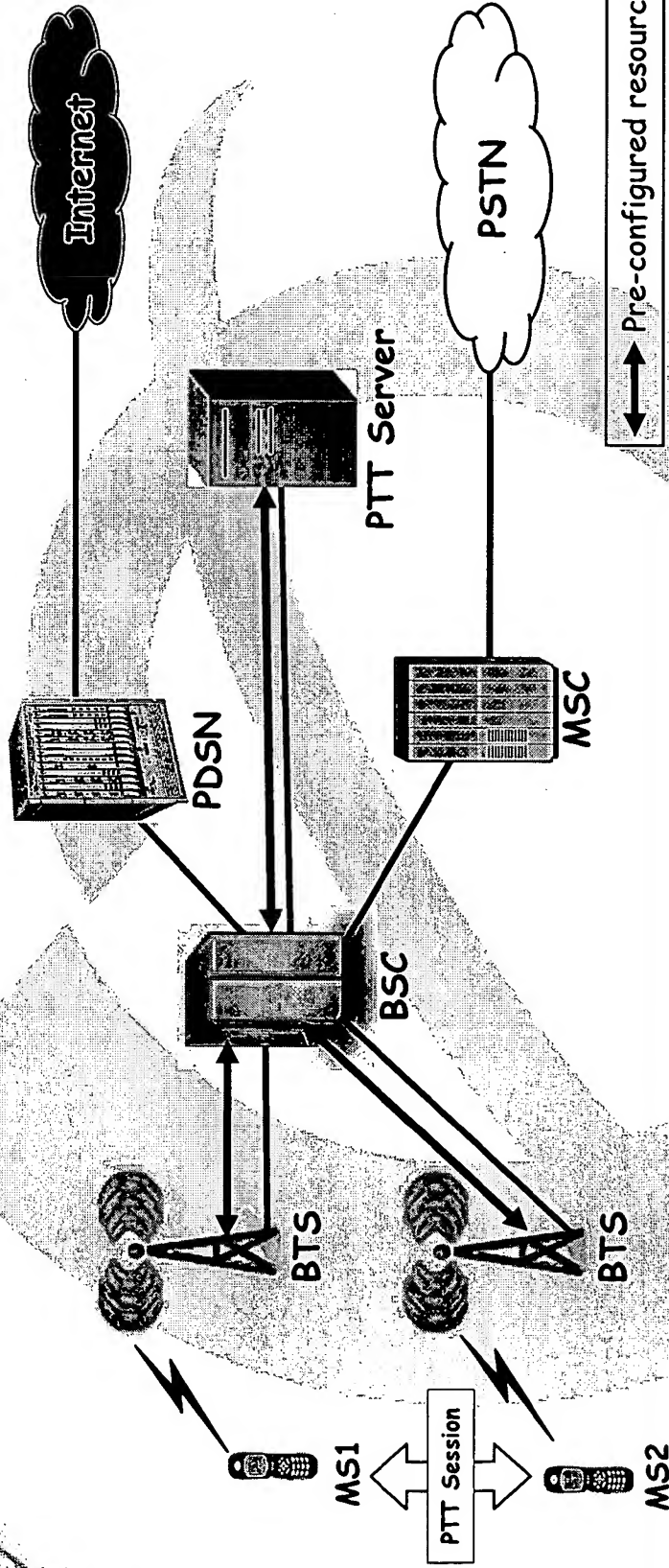
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Dedicated Resources for PTT – Example 2

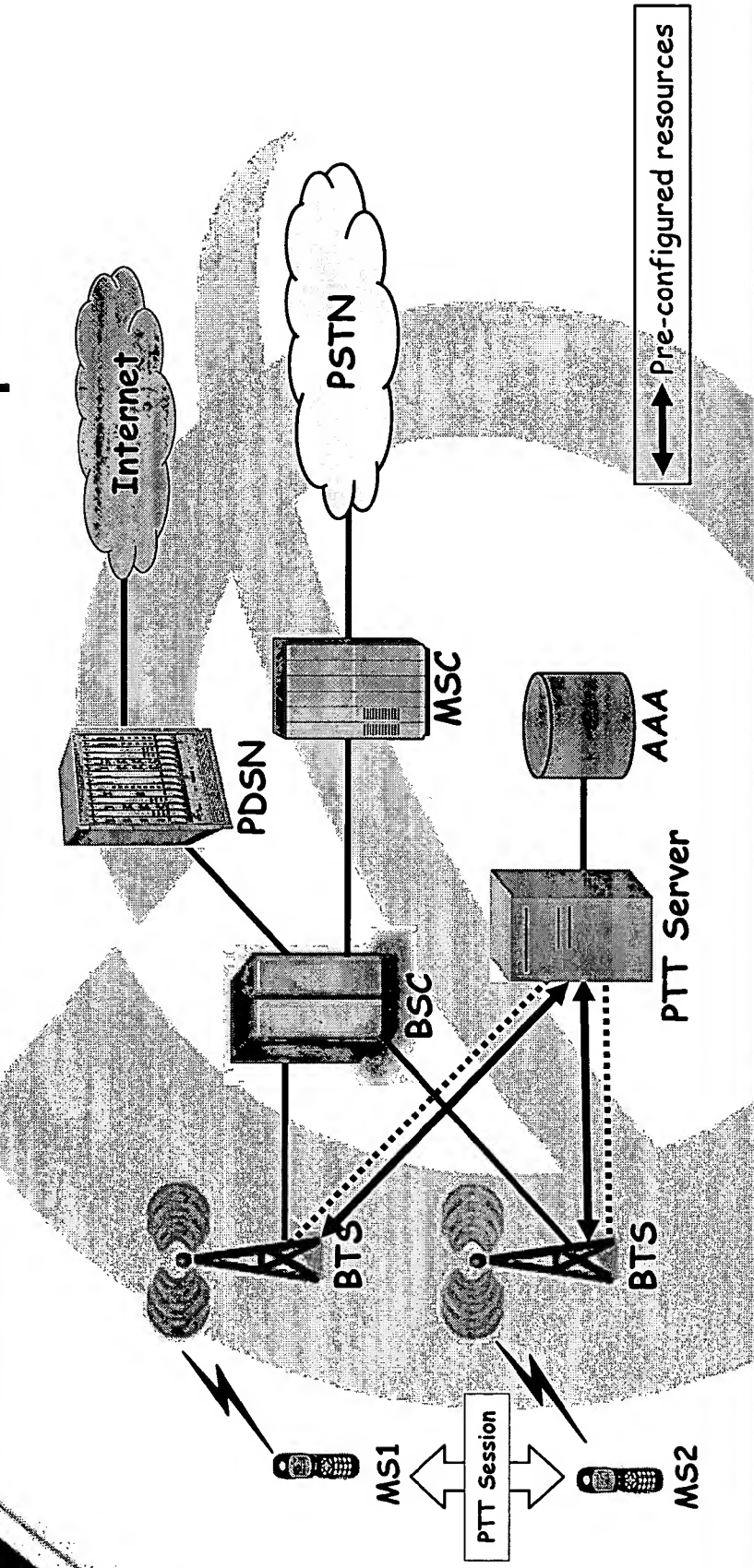


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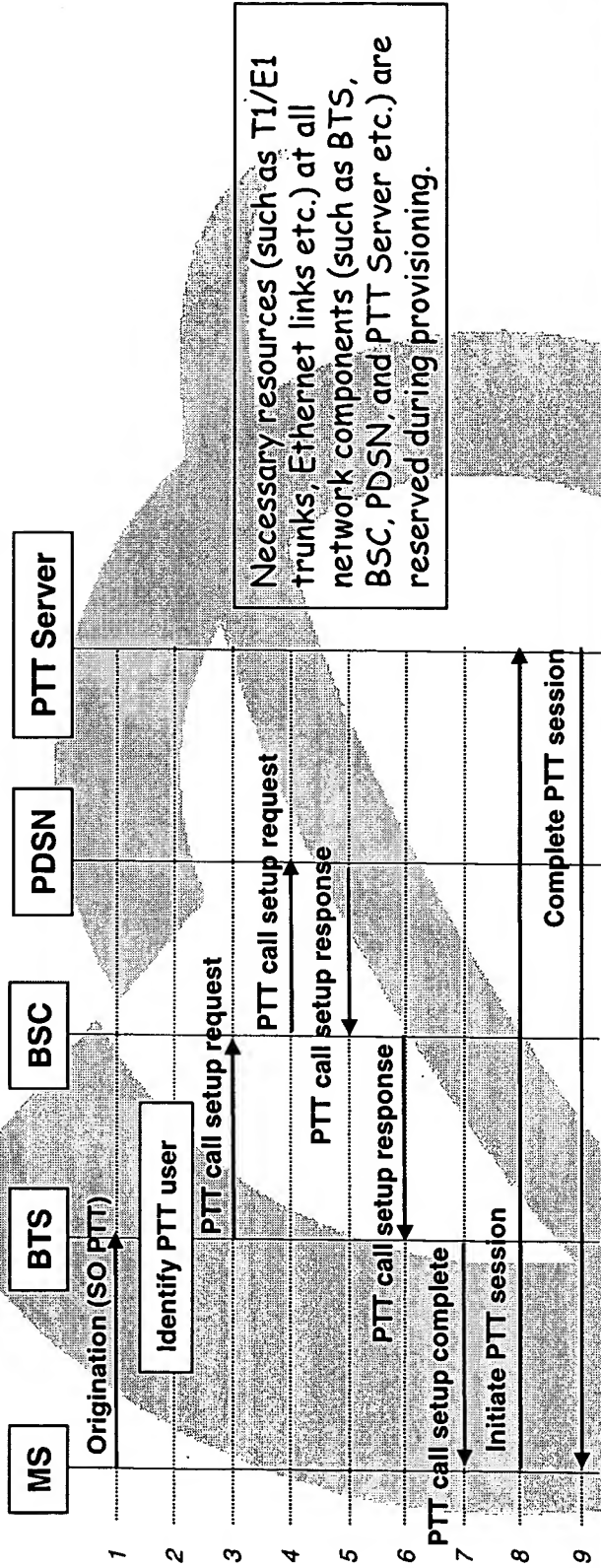
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Dedicated Resources for PTT – Example 3



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An Example of High Level Message Flow



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Conclusions

- Reserving resources at the major nodes of the wireless access networks (such as BTS, BSC, PDSN, PTT Server etc.) can significantly minimize the call setup time for specific packet-based applications (such as PTT)
- Resources must be reserved while the provisioning of the network (and not during the call set up time).
- The access network must be able to identify the users that are requesting a session for specific packet-based applications (such as PTT).
- The nodes in the access network (such as BTS, BSC etc.) may store enough information (user profile) to identify the users who are requesting a session for specific packet-based applications (such as PTT).
- The identification of the application being requested may be stored in the other databases in the network (such as HLR, AAA etc.).

- Claims:

- 1. A Push-to-Talk (PTT) packet based CDMA wireless telecommunications system comprising, in combination:
 - a plurality of network nodes configured to process and route packet based voice calls; dedicated interconnection links between the network nodes utilized solely in supporting PTT calls so that interconnection links do not need to be established at call setup time for a PTT call thereby improving call setup time for PTT calls.
- 2. The system of Claim 1 wherein the network nodes retain control information with respect of PTT users to further speed call setup when a previously supported PTT user re-accesses the network.